The electrical resistance is approximately 10^{10} Ω/cm (at 100° C.),

the refractive index is approximately 1.470,

the dielectric constant ∈ is approximately 4.7 (at 25° C., 1 MHz),

tan δ is approximately 45×10^{-4} (at 25° C., 1 MHz).

To obtain particular properties in the components, it may be expedient to use glasses of different glass compositions for the glass layers on the top side and the underside. It is also possible for a plurality of glasses having different properties, e.g. in terms of their refractive index, density, modulus of elasticity, Knoop hardness, dielectric constant, tan δ, to be applied to the substrate in succession by evaporation coating.

As an alternative to electron beam evaporation, it is also possible to use other means to transfer materials which precipitate as glass. The evaporation material may, for example, be in a crucible which is heated by electron collision heating. Electron collision heating of this type is based on thermionic discharges which are accelerated onto the crucible in order to impact on the material which is to be evaporated with a predetermined kinetic energy. These processes also allow the production of glass layers without applying excessive thermal loading to the substrate on which the glass precipitates.

FIGS. **11**, **11***a* and **12** show a further embodiment of the invention. In this embodiment, a glass layer **14** and a plastics layer **5** have been applied to the underside **1***b* of the substrate **1**.

Referring first of all to FIG. **11**, the connection structure regions **3** on the top side **1***a* of the substrate **1** are selectively covered with a structured plastics layer or covering layer **15** by means of plastics lithography. The regions comprising the semiconductor structures **2** remain uncovered. Then, a glass copy-protect layer **4** is applied to the top side of the substrate by evaporation coating. Then, the copy-protect layer is ground or etched away at least down to the level of the plastics layer **15**. Then, the plastics layer **15** is selectively removed from the top side **1***a*.

A further structuring option is shown in FIG. **11***a*, in which, as in FIG. **11**, the substrate top side is partially covered with plastics by means of plastics lithography. During the glass evaporation-coating operation which then follows, the layer thickness of the glass applied by evaporation coating does not exceed the layer thickness of the plastics layer. Then, in a subsequent process step, the plastics layer and the glass layer on it can be detached by means of a lift-off technique.

As shown in FIG. **12**, processing similar to FIG. **11** or FIG. **11***a* produces a wafer in which the semiconductor structures **2** are coated with glass, while the connection regions **3** are uncovered.

Referring now to FIG. **13**, which illustrates a particular embodiment for flip chip technology, all grid arrays **18** are applied to the connection regions **3** at the top side of the wafer.

Finally, the wafer is diced to produce hermetically sealed circuits, resulting in copy-protected chips.

FIG. **14** illustrates a copy-protect layer **4** which in the lateral direction comprises a plurality of portions, at least two portions having a different etching resistance. In this example, the copy-protect layer comprises a first portion **4***a* of a first material and a laterally adjacent second portion **4***b* of a second material, the first and second materials having different etching rates. By way of example, the first material comprises SiO_2, and the second material comprises the evaporation-coating glass 8329 or G018-189 produced by Schott.

Furthermore, the first and second portions **4***a*, **4***b* have different thicknesses. Moreover, a metal layer **30** is arranged on one side of the copy-protect layer **4**. In addition, the metal layer **30** is located between the copy-protect layer **4** and a further copy-protect layer **4'**.

As a result, in the event of an etching attack, at least part of the semiconductor structures **2**, e.g. the part **2***a* located beneath the first portion **4***a*, is advantageously destroyed even if should prove possible for the second portion **4***b* to be removed while retaining the part **2***b* of the semiconductor structures beneath it.

The following text presents results of various tests carried out on a copy-protect layer made from glass 8329.

FIG. **15** shows the results of a TOF-SIMS measurement, in which the count rate is plotted as a function of the sputtering time. The measurement characterizes the profile of the element concentrations in the copy-protect layer. A thickness consistency for the copy-protect layer of <1% of the layer thickness was determined.

Furthermore, leaktightness tests were carried out on the copy-protect layer made from glass 8329 as follows.

A silicon wafer was provided with an etching stop mask. As is illustrated in FIG. **16**, the wafer **97** was divided into nine perforated areas **98** (1 cm×1 cm). The individual spacing between the holes within the areas was varied from row to row as follows.

1st row: hole spacing 1 mm

2nd row: hole spacing 0.5 mm

3rd row: hole spacing 0.2 mm.

All the square holes **99** had an edge length of 15 μm.

After the unstructured back surface of the wafer had been coated with an 8 μm (specimen A) or 18 μm (specimen B) layer of the glass 8329, the wafer was then dry-etched as far as the glass in the perforated areas. The success of the etching was easy to observe under a transmitted light microscope.

A helium leak test revealed a leak rate of less than 10^{-8} mbar 1/sec for all 18 measured areas.

The high strength of the glass layer regions despite considerable bulging of the wafer during the measurement in the respective measurement area is also amazing. There was no change in the glass structure even after conditioning at 200° C.

Furthermore, resistance measurements were carried out on the copy-protect layer in accordance with DIN/ISO. The results are given in Table 1.

TABLE 1

Specimen designation: 8329			
Water DIN ISO 719 Class	Consumption of HCl (ml/g)	Na_2O equivalent [μg/g]	Comments
HGB 1	0.011	3	none
Acid DIN 12116 Class	Material removal [mg/dm^2]	Total surface area [cm^2]	Comments/ visible changes
1 W As material	0.4	2 × 40	unchanged
Alkali DIN ISO 695 Class	Material removal [mg/dm^2]	Total surface area [cm^2]	Comments/ visible changes
A2 As material	122	2 × 14	unchanged

It will be clear to the person skilled in the art that the invention is not restricted to the exemplary embodiments described and that features of various exemplary embodiments can be combined without departing from the scope of the invention.